9.1A Troubleshooting

Contents

9.1A.1 Troubleshooting ·····9.1KE-1
9.1A.2 List of Error Messages ·····9.1KE-3
9.1A.3 List of Erro Messages about Servo Amplifier ·····9.1KE-18

9.1A.1 Troubleshooting

⚠ CAUTION

During troubleshooting, be sure to observe the precautions given in

S.1 "Safe Work"
S.1.2 "Rules for Safe Operation"
S.1.3 "Rules for Maintenance"
S.1.4 "Rules for Operating or Checking the Electrical Devices"

The messages that the RX can show on the operation panel are divided into the classes given in the table below.
If any message appears, check the contents and take necessary actions.

Class	Contents	Resetting for operation
E- ＊＊	• Trouble in operation causing frame stop • Trouble in stopped state not related to the operator	Resetting after corrective action needed
W-＊＊	• Trouble in operation not causing frame stop • Trouble in stopped state related to the operator	Resetting after corrective action needed
INV1-＊＊	• Trouble related to main motor inverter	Resetting after corrective action needed
INV7-＊＊	• Trouble related to SCD doffing motor inverter (only on frame with SCD specification)	Resetting after corrective action needed
INV8-＊＊	• Trouble related to compact motor inverter (only on frame with compact device)	Resetting after corrective action needed
INV9-＊＊	• Trouble related to pneumatic motor inverter (RX with the energy-saving pneumatic device only)	Resetting after corrective action needed
AMP1 to 9-＊＊	• Trouble related to draft roller and lift-driving servomotor/amplifier * Concerning the relationship between driving shafts and amplifier numbers, see the table below.	Resetting after corrective action needed
M-＊＊	• Failure in operation because of disagreement of conditions upon operator's operation	No need of resetting (The message disappears automatically.) **REFERENCE:** Some message may require an action. Since the number is the same as for E- and W-, refer to the respective action.
Text only (no symbol)	• Message upon operating panel operation or setting • Frame status message	No action needed. (The message disappears automatically.)

NOTE: Messages (E-, W-, INV-, AMP-) corresponding to the found troubles will be registered to troulbe log automatically.
The history of occured troubles can be referred to message display screen under maintenance mode. (access method:click [MAINTE] icon to reach [MESSAGE] icon)

NOTE: For some of E- ＊＊ , W-＊＊ , the corresponding Explanation and Action to be Taken can be shown on the machine. ("The List of Troubles" on help display screen)

Driving shaft and amplifier No. relationship table

	2-head frame (No auxiliary gearing)	2-head frame (With auxiliary gearing)	3-head frame
Front roller (GE-driving)	AMP1	AMP1	AMP1-2
Front roller (MH-driving)	-	-	AMP1-1
Middle roller (GE-driving)	AMP2	AMP2-1	AMP9
Middle roller (MH-driving)	-	-	AMP2-1
Middle roller (OE-driving)	-	AMP2-2	AMP2-2
Back roller (GE-driving)	AMP3	AMP3-1	AMP8
Back roller (MH-driving)	-	-	AMP3-1
Back roller (OE-driving)	-	AMP3-2	AMP3-2
Ring rail	AMP4	AMP4	AMP4

9.1A.2 List of Error Messages

⚠ CAUTION

When taking any of the error recovery actions listed below, be sure to observe the precautions given in
S.1 "Safe Work"
S.1.2 "Rules for Safe Operation"
S.1.3 "Rules for Maintenance"
S.1.4 "Rules for Operating or Checking the Electrical Devices"

Error Messages	Related Machine	Explanation	Actions to be Taken
E-1A Stop by Power Interruption (Deisable continuous operation)	RX	[Disable] is selected for continuous operating function. The power is not supplied. Low power supply voltage. Lack of power supply phase. Occurrence of power interruption for 6 ms or more.	Keep the main breaker off until the power supply becomes normal. If this occurs while the power supply is nornal: 1 Check the power supply cable for continuity and no defective contact. 2 Replace the inverter board. 3 Replace the I/O board and CPU board.
W-1A Occurrence of Momentary Power Interruption	RX	Power recovery operation by the machine after detection of power interruption.	If occurs frequently, check the plant power supply. 1 Existence of any place struck by lightning around the plant 2 Existence of any momentary interruption in the power route 3 Lacking phase 4 Is any heavy electric machine near the ring frame?
E-1B Ring Frame Stop Due to Power Interruption (Long power interruption)	RX	The ring frame is stopped due to detection of power interruption over 2 seconds.	Check the cause of interruption on the plant power supply side. 1 Any interruption in the power line? 2 Lacking phase 3 Is any heavy electric machine near the ring frame? If any power interruption occurs while the power sypply is normal: 1 Check and clean any cotton or other dust at the contact of contactor MS11. 2 Check for any loosening of the wiring of MS11, INV1, and PCB2.
E-1C Ring Frame Stop Due to Power Interruption (Recurrence of momentary power interruption)	RX	The ring frame was stopped due to re-detection of power interruption immediately after power recovery.	Check the cause of interruption on the plant power supply side. 1 Any interruption in the power line? 2 Lacking phase 3 Is any heavy electric machine near the ring frame? If any power interruption occurs while the power sypply is normal: 1 Check and clean any cotton or other dust at the contact of contactor MS11. 2 Check for any loosening of the wiring of MS11, INV1, and PCB2.

9.1A.2 List of Error Messages

Error Messages	Related Machine	Explanation	Actions to be Taken
E-1D Ring Frame Stop Due to Power Interruption (Occurrence of power interruption upon reacceleration)	RX	The ring frame was stopped due to redetection of power interruption during rpm recovery after power recovery.	Check the cause of interruption on the plant power supply side. 1 Any interruption in the power line? 2 Lacking phase 3 Is any heavy electric machine near the ring frame? If any power interruption occurs while the power sypply is normal: 1 Check and clean any cotton or other dust at the contact of contactor MS11. 2 Check for any loosening of the wiring of MS11, INV1, and PCB2.
E-1E Ring Frame Stop Due to Power Interruption (Power recovery operation not possible)	RX	The ring frame was stopped due to dissatisfaction of the power recovery conditions after a momentary power interruption. <Conditions disabling recovery> • Winding on bobbin is 99% or more. • The rpm is below the specified level. • Another error occurred.	
E-1F SCD and Tray Stop Due to Power Interruption	RX	The machine was stopped due to detection of power interruption exceeding 2 seconds during SCD or tray operation.	Check the cause of interruption on the plant power supply side. 1 Any interruption in the power line? 2 Lacking phase 3 Is any heavy electric machine near the ring frame? If any power interruption occurs while the power sypply is normal: 1 Check and clean any cotton or other dust at the contact of contactor MS11. 2 Check for any loosening of the wiring of MS11, INV1, and PCB2.
E-2A Ringrail Over Upper	RX	The ring rail has exceeded the upper limit. (The PRS1 has gone OFF.)	1 Check whether a sensor (PRS1) and bracket adjustment are proper. 2 Check whether there are failure of a sensor, and disconnection of a line and the slack of a terminal stand. 3 Turn off the power, and lower the ring rail to the proper position by turning the manual lifting handle, and adjust Ringrail Pos. to Zero. 4 Go up and down a ring rail manually, and check whether it operates normally. If the machine doesn't operates normally, please replace the CPU board, I/O board, servo amplifier and servo motor.

Error Messages	Related Machine	Explanation	Actions to be Taken
E-2B Ringrail Over Lower	RX	The ring rail has dropped down below the lower limit. (The PRS1 has gone OFF.)	1 Check whether a sensor (PRS1) and bracket adjustment are proper. 2 Check whether there are failure of a sensor, and disconnection of a line and the slack of a terminal stand. 3 Turn off the power, and lift the ring rail to the proper position by turning the manual lifting handle, and adjust Ringrail Pos. to Zero. 4 Go up and down a ring rail manually, and check whether it operates normally. If the machine doesn't operates normally, please replace the CPU board, I/O board, servo amplifier and servo motor.
E-4 Motor Temperature	RX	The thermal relay of a pneuma motor (M70, M71) or the cooling fan motor (M90) integrated thermal switch is activated.	1 When The thermal relay (OL70, 71) of a pneuma motor is tripped, check the drive system of a pneuma motor. 2 When The thermal relay (OL70, 71) is not tripped, check the drive system of a cooling fan motor.
E-8A Emergency PB ON or Door Open	RX	The emergency stop button was pressed (and locked). Or any of the doors on the OE and GE control boxes is open.	1 Remove the cause of the emergency stop and then turn the emergency stop button clockwise to unlock. 2 Check whether all the control box doors (one at the GE and two at the OE) are closed tightly. 3 When there is a wire switch, please check whether it is operating unusually.
E-9 Pneumatic inverter pressure sensor is abnormal.	Pneumatic INV	Pneumatic inverter pressure cannot be detected normally.	1 Check the pressure sensor wiring. 2 When the pressure cannot be detected frequently, replace the pressure sensor.
W-9B Excessive accumulation of pneumatic box fry or fleece	Pneumatic INV	The amount of fly or fleece in the pneumatic box exceeds the warning level.	Remove the fly or fleece inside the pneumatic box.
W-9C Pneumatic teaching is incomplete.	Pneumatic INV	The pneumatic teaching operation is incomplete.	After removing the fly or fleece inside the pneumatic box, carry out the pneumatic teaching operation.
E-10 Full Bobbin	RX	The RX cannot run because it has full bobbins.	Check that the doffing is completed, then reset the production length counter to zero.
E-11 Lifting or In Calculation	RX	The Start switch was pressed while the lifting bar was running or the controller was executing calculations.	Wait a few seconds, then press the Reset switch.
E-13A Lappet Position is Abnormal	RX	The RX cannot run because the lappets are not in place at the proper angle.	Check the OE sensors (PRS2TR and PRS2TL) and the GE sensors (PRS2TRA and PRS2TLA:three-head machine only). PRS2TR / PRS2TL / PRS2TRA / PRS2TLA When lappets are turned up: OFF / ON / ON / ON When lappets are horizontal: ON / OFF / OFF / OFF

9.1A.2 List of Error Messages

Error Messages	Related Machine	Explanation	Actions to be Taken
E-13D Lappet Driving Delay	RX	The lappet drive mechanism is faulty. (Lappet turning-up motor overtime)	1 Check in the state where a lappet cyrinder can operate. 2 Check whether the OE lappet sensors (PRS2TR and PRS2TL) and the GE sensors (PRS2TRA and PRS2TLA: three-head machine only) are turned ON/OFF normally.
E-16B Ringrail Position was Changed	RX	The zero point of the ring rail is incorrect. Or the ring rail position sensor PRS8 is not adjusted correctly.	1 Check that the PRS8 is adjusted correctly. 2 Check that the currently displayed position of the ring rail matches the actual position. If it does not, make zero point setting. No zero point of the ring rail has been set, so the RX cannot run. Set the zero point of the ring rail.
W-16C Ringrail Pos. is not Set to Zero	RX	The RX cannot run because the Ringrail Pos. is not Set to Zero.	Set the Ringrail Pos. to be Zero.
E-16D Lifting Motion is Abnormal	RX	The difference of the actual amount of movements of a ring rail and the instructions is over the regulations.	1 Check whether there are any abnormalities in a ring rail drive system. 2 Check whether there are any abnormalities in wiring between servo amplifier and an I/O board.
E-17 CPU was Reset	RX	The CPU board is reset during RX operation.	1 Check if any additional wiring is placed near the 5 V line wiring (P5 - E5) connected to the CPU board. (a) Is there any cable which is likely to make a noise in the same duct? (b) Is there any cable which is likely to make a noise near the 5 V line? 2 Confirm whether the voltage between P5 and E5 of a power supply PCB2 is normal and please adjust volume. 3 If this error occurs frequently, replace the CPU board with a new one.
E-18 Spindle Speed is Abnormal	RX	The measured spindle speed (rpm) differs from the set speed by 5% or more.	1 Adjust and check the spindle speed detection sensor (PRS5). 2 Check if the main motor belt is not damaged and the tension is appropriate. 3 Check a setup (NMAX) of the spindle max speed. 4 Check the settings for the motor pulley and the drive pulley.
W-19 Twist is faulty	RX	The measured number of twists differs by 5% or more from the schedule twists(computes from the setting value TW).	1 Adjust the front roller speed sensor (PRS4) 2 Check if the main motor belt is not damaged and the tension is appropriate. 3 Adjust the tin pulley shaft rotation sensor (PRS5). 4 Check the set value RF (front roller diameter) and the Tw (number of twists). 5 Check the twist change gear and twist constant gear.
E-20 SCD State is Abnormal	DOF	The RX cannot run because the doffing bar stays in the closing position above the spindles.	Move the doffing bar from the closing position above the spindles to any other position.

Error Messages	Related Machine	Explanation	Actions to be Taken
E-40-✻✻ Block✻✻ compact motor overload	Compact	Operation of the thermal relay for block ✻✻ suction motor	Check and correct the cause of abnormality. • Isn't the impeller clogged with fly and fleece? • Check the motor shaft for smooth rotation. • Check the motor wiring for any loosening.
E-42-✻✻ Block ✻✻ suction power abnormality (condense side)	Compact	Block ✻✻ suction power abnormality (clogging generation in condense zone)	Check the suction piping (especially the condense zone) for any clogging with fly and fleece, and correct it.
E-43-✻✻ Block ✻✻ suction power abnormality (blower side)	Compact	Block ✻✻ suction power abnormality (clogging generation in blower)	Check the suction piping and blower for any clogging with fly and fleece, and correct it. Check the blower for normal revolution.
W-44 Average compact suction power abnormality	Compact	Overall pressure drop in the frame	Overall frame piping may be clogged with fly and fleece. Conduct maintenance.
E-45 Block ✻✻ excessive suction power fluctuation	Compact	Much suction power fluctuation in block ✻✻	Check the piping for any clogging with fly and fleece, and take the corrective action. Also check the blower for smooth revolution.
W-46-✻✻ No.✻✻ Compact IF board terminal setting error	Compact	The settings for the board switches are wrong.	Concerning the four DIP switches on each board inside each relevant joint box, normally, DIP switches in GE-terminal boxes are ON and those in other boxes are OFF. This needs to be checked.
W-47-✻✻ No.✻✻ Compact IF board communication wire failure	Compact	A communication error has occurred on the compact board.	• Check whether the board wires are disconnected, loosened, or damaged. • Check whether there is any noise generation source around the board. • Replace the compact board with a reserved one.
E-52A Doff. Bar Went Over Limit (PRS21)	DOF	The bar overrun safety sensor (PRS21) in the closing position was activated.	1 Check the position of safety sensor and adjust it if necessary. 2 Check the drive mechanism and control circuitry. (a) Is the brake gap of the doffing motor proper? (b) Is the factory's voltage regulation within the proper range?
E-52B Doff.Bar Went Over Limit (PRS22)	DOF	There is a height difference between the RH and LH sides of the doffing bar.	1 Check the tension of the timing belt. If the belt is loose, adjust it. 2 Check that fibers are not entangled in the timing belt mechanism. Clean the timing belt and its surroundings. Adjust the timing belt tension again. 3 Check the mounting position of the PRS22. 4 After completion of adjustment and check, please perform PRS22 clear operation on an initial-setting screen.
E-52C Doffing bar PA stop error (With pulse change)	DOF	The doffer did not stop moving at the PA position.	1 Check if the SCD stopper is mounted incorrectly. 2 Check the encoder function and harness disconnection.
E-52D Doffing bar PA stop error (PA position error)	DOF	After the doffer brake was released, the doffer stopped at a position above PA.	1 Check if the SCD stopper is mounted incorrectly. 2 Check the encoder function and harness disconnection.

9.1A.2 List of Error Messages

Error Messages	Related Machine	Explanation	Actions to be Taken
E-54 Doffing Bar Open-Close is Delay	DOF	The opening or closing speed of the doffing bar is too low. (It required) more than 20 seconds to complete opening or closing.)	1 Check the air pressure. 2 Check if there is any obstruction to the doffing bar travel. 3 Adjust the speed controller so that the sequence of the air cylinder operation will complete in 4 to 5 seconds (typical).
E-57 Dof.SW (PRS10, 11) is Abnormal	DOF	Both proximity switches PRS10 and PRS11 are OFF.	1 Check the opening/closing position of the doffing bar. 2 Check the wiring of these switches. Replace them if necessary
E-57A Dof. SW State (PRS3) is Abnormal	DOF	Even five seconds after the intermediate stopper solenoid was turned to the OUT position, the PRS3 was not turned ON. Even five seconds after the intermediate stopper solenoid was turned to the IN position, the PRS3 was not turned OFF.	1 Check the air pressure. 2 Check the movement of the intermediate stopper. 3 Adjust the PRS3 so that it turns on when the intermediate stopper is out.
E-58B Doffer Interlocked Lappet	DOF	The SCD has received no tiltedlappets confirmation signal, so the SCD cannot start.	1 Check at both RH and LH sides if the lappets have been completely tilted up. 2 Check if the OE sensors on both RH and LH sides are ON when the lappets are turned up.
E-58C Doffer Interlocked B.C	DOF	The blow cleaner is not placed in the retracted position (the retraction completion LS31 is not ON), so the SCD cannot start.	1 Move the blow cleaner to the retracted position. 2 Check the LS31. **NOTE:** To start the SCD automatically after the blow cleaner has retracted, modify the set value DS.
E-58E Doffer Interlocked Side Frame	DOF	The SCD is disabled for safety if any SCD on the adjacent RX frame is running.	1 Wait for the SCD on the adjacent RX frames to stop running. 2 If the SCD on the adjacent RX frame is in the storage position, check the following: (a) Is CR25 on the adjacent frame OFF? (b) No input error or disconnected wiring?
E-58G Doffer Drivenby Manual Operation	DOF	The 3-position key switch is set to the Manual position.	1 Turn the 3-position key switch to the Automatic position. 2 Press the Reset button and then press the SCD start switch.
E-58I Doffing Bar is Out of Starting Pos.	DOF	At the time of interlock operation, the doffing bar was not in the storage position.	1 Move the doffing bar to the storage position in manual operation. 2 After the above operation, check that the bar is stopped between the PC and PD positions.
E-60C Feeding Motionisn't Complete	TRAY	The trays have not completed emptybobbin unloading, so the SCD cannot start.	1 For the trays, continue the operation until end of tray feeding. **NOTE:** After this operation, modify the setting value of DS, if you want to operate the SCD automatically. 2 Check that tray sylinder is on the feeding position.
E-60F Base Tray Pos. is not Initial	TRAY	The tray cylinders are neither in the feeding position nor retracted position.	Adjust the sensors so that each of them runs as listed below. (Counterclockwise)

	PRS46A	PRS46B	PRS48A	PRS48B
Feeding position	OFF	ON	ON	OFF
Retracted position	ON	OFF	OFF	ON

Error Messages	Related Machine	Explanation	Actions to be Taken
E-61E Tray position is abnormal (PH60).	TRAY	The tray position sensor (PH60) is not turned OFF.	1 Check the tray position. 2 Check if the trays can be carried in smoothly. 3 Check the tray position sensor (PH60) for its functioning and the cable for any discontinuity.
E-61F Tray position is abnormal (PH60).	TRAY (TBC)	The tray sensor (PH60) on the forward side is not turned OFF. (Tray loading error).	1 Adjust the sensor (PH60) position. 2 Check the pushing pressure of the TBC turntable. 3 Check that trays without bobbins are not carried in. 4 Check the sensor for any defect and its cable for any discontinuity.
E-62A Tray CY1 Clogged	TRAY	Since the tray cylinder in right side did not complete its operation within the specified time, the RX resulted in emergency stop. (Specified time length: Fixed to 10 sec.)	1 The tray loading cylinder receives a faulty load. (a) Check if the trays can be moved smoothly. (b) Check if there is no fly or dust clog on the tray rail. 2 Check if the air pressure has not dropped abnormally or if the cylinder speed is proper.
E-62B Tray CY2 Clogged	TRAY	Since the tray cylinder in left side did not complete its operation within the specified time, the RX resulted in emergency stop. (Specified time length: Fixed to 10 sec.)	1 The tray loading cylinder receives a faulty load. (a) Check if the trays can be moved smoothly. (b) Check if there is no fly or dust clog on the tray rail. 2 Check if the air pressure has not dropped abnormally or if the cylinder speed is proper.
E-62C Clogged tray (OE: PH61)	TRAY	No tray was detected within the specified time. (PH61) (Clogged tray on unloading side.)	1 Check for no tray displacement or clogging on the tray outlet portion. 2 Check that the cylinder is in the return position and correct the tray position. (Fully in the loom.)
E-62D Clogged tray (GE: PH62)	TRAY	No tray detection within the specified time. (PH62) (Clogged tray on loading side.)	1 Check for no tray displacement or clogging on the GE turning portion. 2 Check that the cylinder is in the return position and correct the tray position. (Fully in the loom.)
E-63A Entrance of tray without bobbin. (PH60)	TRAY	PH60 failed in detecting four bobbins upon tray loading. (Entrance of tray without bobbin)	1 If no tray exists on the tray at the inlet, place a bobbin on the tray. 2 If the tray at the inlet is displaced, adjust the tray to the sensor position. 3 After checking 1 and 2, install and remove the tray at the sensor position to check sensor ON and OFF. REFERENCE: The error cannot be reset before conduction step 3.
E-65 B.C. Motor Temperature	TRAY	The BC motor thermal trip has occurred.	Remove the cause of mechanical overload, and then reset the thermal relay (OL30).
W-67 Tray conveyance has not started	TRAY	Tray conveyance has stopped for more than the set time.	After checking the state of the RX, start tray conveyance.
W-69A Doffer Pulse Count isn't Resetted	DOF	No doffing bar positions have been registered, or the original position cannot be recognized.	1 Register the positions if not registered. 2 If this error message (W-69A) appears after E-69C, register the original position.

9.1A.2 List of Error Messages

Error Messages	Related Machine	Explanation	Actions to be Taken
E-69C Doff.Enc.Pulse (PG7) is Abnormal	DOF	• An input error of encoder (PG7) pulses for the doffing bar movement has occurred. • One second after the issue of the doffing motor start command, the controller monitors the input of encoder pulses every approximately 500 ms. If no specified encoder pulse is input, the controller recognizes it as an error.	1 Check the following points: (a) encoder wiring and connector (b) encoder coupling (looseness and break) (c) doffing motor contactor (weak contact) (d) I/O board (defective) (e) Doffing motor (overloaded) 2 Then, register the original position.
E-74A No Req.Signalhas come from Winder	TRAY	No request signal has arrived from the winder, so the RX cannot perform positioning.	Wait until a request signal comes. (Only 1 to 1 connection) (Until then, automatic doffing cannot start.)
E-77 Bobbin Shooter is Empty. (PH49)	TBC	The drum is jammed with bobbins. (Even after the specified seconds tCE from the start of the drum motor, the sensor PH49 is not turned OFF.)	1 Check whether the shooter is jammed with bobbins. 2 Carry out the operational check of the PH49. 3 Check whether the drum is jammed with bobbins. 4 Check whether bobbins in the shooter are upright.
W-77A TBC bobbins are running short (PH51)	TBC	The hopper is short of bobbins. (PH51 of the hopper is turned off.)	1 Load bobbins into the hopper. 2 Check the operation of the sensor (PH51). 3 Change setting of W-77A Warining Count and W-77A Stop Count when residual qoantity of bobbins in the hopper has a margin.
E-77B TBC shooter jammed (PH52)	TBC	The TBC shooter is jammed with bobbins. (PH52 has been turned off for a long time.)	1 Check if the upper shooter is jammed with bobbins. 2 Check the operation of the sensor (PH52). 3 Check if cotton dust is attached to the periphery of PH52.
E-78 (OL81) TBC Motor is Tripped.	TBC	Any of the thermal relays (OL81) of the TBC motor is activated.	1 Check for any error that caused overload. 2 Check for bobbin jam.
W-79A Speed balance alarm (R side)	TRAY	• The cylinder feed speed on the R side is faster than the specified value. • The speed difference between the L and R sides is excessive. (L>R)	1 If fluff deposits on the tray, rail, etc., clean it. 2 Adjust the speed controller so that the cylinder feed time becomes about 4 seconds on both the L and R sides.
W-79B Speed balance alarm (L side)	TRAY	• The cylinder feed speed on the L side is faster than the specified value. • The speed difference between the L and R sides is excessive. (L<R)	1 If fluff deposits on the tray, rail, etc., clean it. 2 Adjust the speed controller so that the cylinder feed time becomes about 4 seconds on both the L and R sides.

Error messages of 2-head type RX

Error Messages	Related Machine	Explanation	Actions to be Taken
E-90 Front roller rpm error (PRS4)	RX	The difference between the measured rpm value of the front roller and the indicated value was larger than the specification. (Total draft error, twist multiplier error)	1 Check adjustment of the sensor (PRS4) for rpm measurement. 2 Check if an abnormal load is not applied to the front roller drive system.
E-91A Middle roller (GE) rpm error (PRS6A)	RX	The difference between the measured rpm value of the middle roller (GE side) and the indicated value was larger than the specification. The difference between the measured value of break draft by the drive system on the GE side and the command value was 3%.	1 Check adjustment of the sensor (PRS6A) for rpm measurement. 2 Check if an abnormal load is not applied to the middle roller drive system.
E-91B Middle roller (OE) rpm error (PRS6B)	RX	The difference between the measured rpm value of the middle roller (OE side) and the indicated value was larger than the specification. The difference between the measured value of break draft by the drive system on the OE side and the command value was 3%.	1 Check adjustment of the sensor (PRS6B) for rpm measurement. 2 Check if an abnormal load is not applied to the middle roller drive system.
E-92A Back roller (MH) rpm error (PRS7A)	RX	The difference between the measured rpm value of the back roller (MH side) and the indicated value was larger than the specification. The difference between the measured value of total draft by the drive system on the MH side and the command value was 3%. The difference between the measured value of break draft by the drive system on the MH side and the command value was 3%.	1 Check adjustment of the sensor (PRS7A) for rpm measurement. 2 Check if an abnormal load is not applied to the back roller drive system.
E-92B Back roller (OE) rpm error (PRS7B)	RX	The difference between the measured rpm value of the back roller (OE side) and the indicated value was larger than the specification. The difference between the measured value of total draft by the drive system on the OE side and the command value was 3%. The difference between the measured value of break draft by the drive system on the OE side and the command value was 3%.	1 Check adjustment of the sensor (PRS7B) for rpm measurement. 2 Check if an abnormal load is not applied to the back roller drive system.
E-93 Front roller torque error	RX	The torque value of the front roller drive system exceeded the specification.	1 Check if an abnormal load is not applied to the front roller drive system.
E-94A Middle roller (GE) torque error	RX	The torque value of the middle roller (GE side) drive system exceeded the specification.	1 Check if an abnormal load is not applied to the middle roller drive system.

9.1A.2 List of Error Messages

Error messages of 2-head type RX

Error Messages	Related Machine	Explanation	Actions to be Taken
E-94B Middle roller (OE) torque error	RX	The torque value of the middle roller (OE side) drive system exceeded the specification.	1 Check if an abnormal load is not applied to the middle roller drive system.
E-95A Back roller (GE) torque error	RX	The torque value of the back roller (GE side) drive system exceeded the specification.	1 Check if an abnormal load is not applied to the back roller drive system. 2 Operate with a smaller rpm.
E-95B Back roller (OE) torque error	RX	The torque value of the back roller (OE side) drive system exceeded the specification.	1 Check if an abnormal load is not applied to the back roller drive system. 2 Operate with a smaller rpm.
E-96 Front roller motor temperature switch activated	RX	The temperature switch of the front roller motor was activated.	1 Leave the motor as it is until it cools down (30 minutes or more). 2 Check if the motor load is not extraordinarily heavy. 3 Check if cotton fly, etc. does not adhere to the motor. 4 Turn on the power and check (with enough care for safety) if the fan (M93) operates in ordinary stop status of the RX (without an error). 5 Check for breakage or looseness of the electric wire. 6 If the error has not been eliminated, replace the I/O substrate and the CPU substrate.
E-97A Middle roller (GE) motor temperature switch activated	RX	The temperature switch of the middle roller motor on the GE side was activated.	1 Leave the motor as it is until it cools down (30 minutes or more). 2 Check if the motor load is not extraordinarily heavy. 3 Check if cotton fly, etc. does not adhere to the motor. 4 Turn on the power and check (with enough care for safety) if the fan (M94)" operates in ordinary stop status of the RX (without an error). 5 Check for breakage or looseness of the electric wire. 6 If the error has not been eliminated, replace the I/O substrate and the CPU substrate.
E-97B Middle roller (OE) motor temperature switch activated	RX	The temperature switch of the middle roller (OE) motor was activated.	1 Leave the motor as it is until it cools down (30 minutes or more). 2 Check if the motor load is not extraordinarily heavy. 3 Check if cotton fly, etc. does not adhere to the motor. 4 Turn on the power and check (with enough care for safety) if the fan (M95) operates in ordinary stop status of the RX (without an error). 5 Check for breakage or looseness of the electric wire. 6 If the error has not been eliminated, replace the I/O substrate and the CPU substrate.

Three-head Frame Error Message

Error Messages	Related Machine	Explanation	Actions to be Taken
E-90 Front Roller (MH) Pulse is Abnormal.	RX	The difference more than regulation arose between the rotation measurement value of a front roller (MH side), and the directions value. (Total draft is abnormal. The number of twists is abnormal.)	1 Check adjustment of the sensor for rotation measurement (PRS4). 2 Check whether unusual load is applied to the front roller drive system.
E-90C Front roller (GE) rotation speed error (PRS4C)	RX	The difference between the front roller (GE side) rotation measurement value and the direction value was more than specified. (Total draft error, twist count error)	1 Check adjustment of the sensor for rotation measurement (PRS4C). 2 Check whether unusual load is applied to the front roller drive system.
E-91A Mid.Roller (MH) Pulse is Abnormal.	RX	The difference more than regulation arose between the rotation measurement value of a middle roller (MH side), and the directions value. (Brake draft is abnormal.)	1 Check adjustment of the sensor for rotation measurement (PRS6A). 2 Check whether unusual load is applied to the middle roller drive system.
E-91B Mid.Roller (OE) Pulse is Abnormal.	RX	The difference more than regulation arose between the rotation measurement value of a middle roller (OE side), and the directions value. (Brake draft is abnormal.)	1 Check adjustment of the sensor for rotation measurement (PRS6B). 2 Check whether unusual load is applied to the middle roller drive system.
E-91C Middle roller (GE) rotation speed error (PRS6C)	RX	The difference between the middle roller (GE side) rotation measurement value and the direction value was more than specified. The GE-side drive system break draft measurement value was different from the direction value by 3%.	1 Check adjustment of the sensor for rotation measurement (PRS6C). 2 Check whether unusual load is applied to the middle roller drive system.
E-92A Back Roller (MH) Pulse is Abnormal.	RX	The difference more than regulation arose between the rotation measurement value of a back roller (MH side), and the directions value. (Total draft and brake draft are abnormal.)	1 Check adjustment of the sensor for rotation measurement (PRS7A). 2 Check whether unusual load is applied to the back roller drive system.
E-92B Back Roller (OE) Pulse is Abnormal.	RX	The difference more than regulation arose between the rotation measurement value of a back roller (OE side), and the directions value.(Total draft and brake draft are abnormal.)	1 Check adjustment of the sensor for rotation measurement (PRS7B). 2 Check whether unusual load is applied to the back roller drive system.
E-92C Back roller (GE) rotation speed error (PRS7C)	RX	The difference between the back roller (GE side) rotation measurement value and the direction value was more than specified. The GE-side drive system total draft measurement value was different from the direction value by 3%. The GE-side drive system break draft measurement value was different from the direction value by 3%.	1 Check adjustment of the sensor for rotation measurement (PRS7C). 2 Check whether unusual load is applied to the back roller drive system.
E-93 Front Roller (MH) Torque is Abnormal.	RX	The torque value of a front roller (MH) drive system exceeded regulation.	1 Check whether unusual load is applied to the front roller drive system. 2 Carry out a setup which lowered number of rotations, and operate.

9.1A.2 List of Error Messages

Three-head Frame Error Message

Error Messages	Related Machine	Explanation	Actions to be Taken
E-93A Front roller (GE) torque error	RX	The front roller (GE side) drive system torque value exceeded a specified value.	1 Check whether unusual load is applied to the front roller drive system. 2 Operate the roller at a lower rotation speed.
E-94A Mid.Roller (MH) Torque is Abnormal.	RX	The torque value of a middle roller (MH side) drive system exceeded regulation.	1 Check whether unusual load is applied to the middle roller drive system. 2 Carry out a setup which lowered number of rotations, and operate.
E-94B Mid.Roller (OE) Torque is Abnormal.	RX	The torque value of a middle roller (OE side) drive system exceeded regulation.	1 Check whether unusual load is applied to the middle roller drive system. 2 Carry out a setup which lowered number of rotations, and operate.
E-94C Middle roller (GE) torque error	RX	The middle roller (GE side) drive system torque value exceeded a specified value.	1 Check whether unusual load is applied to the middle roller drive system. 2 Operate the roller at a lower rotation speed.
E-95A Back Roller (MH) Torque is Abnormal.	RX	The torque value of a back roller (MH side) drive system exceeded regulation.	1 Check whether unusual load is applied to the back roller drive system. 2 Carry out a setup which lowered number of rotations, and operate.
E-95B Back Roller (OE) Torque is Abnormal.	RX	The torque value of a back roller (OE side) drive system exceeded regulation.	1 Check whether unusual load is applied to the back roller drive system. 2 Carry out a setup which lowered number of rotations, and operate.
E-95C Back roller (GE) torque error	RX	The back roller (GE side) drive system torque value exceeded a specified value.	1 Check whether unusual load is applied to the back roller drive system. 2 Operate the roller at a lower rotation speed.
E-96 Front Roller (MH) Drive Motor Overheats.	RX	Thermal switch on front roller drive motor (MH) works.	1 Don't restart until motor cools down (more than 30 minutes). 2 Check the motor load is too heavy or not. 3 Check the flies come into the motor or not. 4 Switch on the frame, Check the cooling fan (M93). 5 Check the disconnection of wires. 6 If you can't cancel the error, replace the I/O or/and CPU board.
E-96A Front roller (GE) motor thermal switch ON	RX	The front roller (GE) motor thermal switch operated.	1 Leave the motor (for 30 minutes or more) until it cools down. 2 Check if the load on the motor is too heavy. 3 Check if cotton flies, etc. stick to the motor. 4 Turn on the frame and safely check if the fan (M96) is operating while the frame is in a normal standby state. 5 Check if the electric wires are disconnected or loose. 6 When you cannot correct the error, replace the I/O board or/and CPU board.
E-97A Middle Roller Drive Motor (MH side) Overheats.	RX	Thermal switch on middle roller drive motor (MH side) works.	1 Don't restart until motor cools down (more than 30 minutes). 2 Check the motor load is too heavy or not. 3 Check the flies come into the motor or not. 4 Switch on the frame, Check the cooling fan (M94). 5 Check the disconnection of wires. 6 If you can't cancel the error, replace the I/O or/and CPU board.

Three-head Frame Error Message

Error Messages	Related Machine	Explanation	Actions to be Taken
E-97B Middle Roller Drive Motor (OE side) Overheats	RX	Thermal switch on middle roller (OE) drive motor works.	1 Don't restart until motor cools down (more than 30 minutes). 2 Check the motor load is too heavy or not. 3 Check the flies come into the motor or not. 4 Switch on the frame, Check the cooling fan (M95). 5 Check the disconnection of wires. 6 If you can't cancel the error, replace the I/O or/and CPU board.
E-97C Middle roller (GE) motor thermal switch On	RX	The middle roller (GE) motor thermal switch operated.	1 Leave the motor (for 30 minutes or more) until it cools down. 2 Check if the load on the motor is too heavy. 3 Check if cotton flies, etc. stick to the motor. 4 Turn on the frame and safely check if the fan (M97) is operating while the frame is in a normal standby state. 5 Check if the electric wires are disconnected or loose. 6 When you cannot correct the error, replace the I/O board or/and CPU board.
E-100 Synchronous Stop is Defective.	RX	Failure synchronous stop motion between spindle and draft drive.	Mal-twist yarn maybe spun, Check the yarn and remove mal-twist part, if necessary
INV1-＊＊＊	RX		Refer to the instruction manual of inverter.
INV1-??? Error code is unknown	RX	Abnormalities were detected from the inverter. But it is unknown for details.	Open a door with a breaker and cope with it according to the error code currently displayed on the panel of an inverter.
INV1 Inverter is not ready	RX	An inverter is not in the state which can be operated.	1 Check whether the error of an inverter has occurred. 2 Apply operation after the power supply OFF/ON. 3 When an inverter panel is under operation, please make it Drive mode.
INV1 RUN signal circuit is abnormal.	RX	The RUN signal of the main inverter INV1 is turned OFF during an operation.	1 Check whether the INV1 cable is disconnected or loose. 2 When the abnormality does not disappear, replace the I/O1 board or the INV1 control board.
INV1 The command circuit of the INV1 board and that of the I/O1 board are abnormal.	RX	The speed command signal to the main inverter INV1 is abnormal.	1 Check whether the INV1 control signal cable is disconnected or loose. 2 When the abnormality does not disappear, replace the I/O1 board or the INV1 control board.
INV1 Communication error (reading)	RX	Abnormalities were in the serial communication with an inverter.	Communication will be resent if alarm reset is carried out. Check the following, when you occur frequently.
INV1 Communication error (writing)	RX		1 Check whether there are any disconnection and poor contact of a communication line. 2 Check whether there is any cable which a noise tends to generate near the communication line.
INV7- ＊＊＊	SCD		Refer to the instruction manual of inverter.
INV7-??? Error code is unknown	SCD	Abnormalities were detected from the inverter. But it is unknown for details.	Open the door and take the corrective action according to the error code displayed on the inverter panel.

9.1A.2 List of Error Messages

Three-head Frame Error Message

Error Messages	Related Machine	Explanation	Actions to be Taken
INV7 Inverter is not ready	SCD	An inverter is not in the state which can be operated.	1 Check whether the error of an inverter has occurred. 2 Apply operation after the power supply OFF/ON. 3 When an inverter panel is under operation, please make it Drive mode.
INV7 Communication error (reading)	SCD	Abnormalities were in the serial communication with an inverter.	Communication will be resent if alarm reset is carried out. Check the following, when you occur frequently.
INV7 Communication error (writing)	SCD		1 Check whether there are any disconnection and poor contact of a communication line. 2 Check whether there is any cable which a noise tends to generate near the communication line.
INV8- ＊＊＊	RX		Refer to the instruction manual of inverter.
INV8-??? Error code is unknown	RX	Abnormalities were detected from the inverter. But it is unknown for details.	Open the cover and take the corrective action according to the error code displayed on the inverter panel.
INV8 Inverter is not ready	RX	An inverter is not in the state which can be operated.	1 Check whether the error of an inverter has occurred. 2 Apply operation after the power supply OFF/ON. 3 When an inverter panel is under operation, please make it Drive mode.
INV8 Communication error (reading)	RX	Abnormalities were in the serial communication with an inverter.	Communication will be resent if alarm reset is carried out. Check the following, when you occur frequently.
INV8 Communication error (writing)	RX		1 Check whether there are any disconnection and poor contact of a communication line. 2 Check whether there is any cable which a noise tends to generate near the communication line.
INV9- ＊＊＊	RX		Refer to the instruction manual of inverter.
INV9-??? Error code is unknown	RX	Abnormalities were detected from the pneumatic motor inverter. But it is unknown for details.	Open the door and take the corrective action according to the error code displayed on the inverter panel.
INV9 Inverter is not ready	RX	An pneumatic motor inverter is not in the state which can be operated.	1 Check whether the error of an inverter has occurred. 2 Apply operation after the power supply OFF/ON. 3 When an inverter panel is under operation, please make it Drive mode.
INV9 Communication error (reading)	RX	Abnormalities were in the serial communication with an pneumatic motor inverter.	Communication will be resent if alarm reset is carried out. Check the following, when you occur frequently.
INV9 Communication error (writing)	RX		1 Check whether there are any disconnection and poor contact of a communication line. 2 Check whether there is any cable which a noise tends to generate near the communication line.
AMP1- ＊＊＊ to AMP9- ＊＊＊	RX		Refer to Subsection 9.1A.3 “List of Erro Messages about Servo Amplifier”.
AMP1-A?? to AMP9-A?? Error code unknown	RX	An error was detected from the draft roller and the lift-driving servo amplifier, but nothing is known about its details.	Check whether there are any abnormalities in a draft roller and the lift-driving system.

Three-head Frame Error Message

Error Messages	Related Machine	Explanation	Actions to be Taken
AMP1 to AMP9 Operation preparation not completed	RX	The draft roller and the lift-driving servo amplifier are in an inoperable state.	1 Check whether the error of AMP has occurred. 2 Apply operation after the power supply OFF/ON. 3 Check whether there are any abnormalities in wiring between an I/O board and servo amplifier if it cannot be operated.
AMP1 to AMP9 Servo ON signal circuit error	RX	The servo ON signal of the servo amplifier AMP4 is turned OFF during an operation.	1 Check whether the AMP control signal cable is disconnected or loose. 2 When the abnormality does not disappear, replace the I/O2 board or the AMP.
AMP1 to AMP9 I/O1 substrate command circuit error	RX	The speed command signal to the servo amplifier AMP* had an error.	1 Check for breakage or looseness of the control signal wiring of AMP*. 2 If the error has not been eliminated, replace the I/O1 substrate or the AMP*.
AMP1 to AMP9 I/O2 board command circuit error	RX	The speed command signal to the servo amplifier AMP4 is abnormal.	1 Check whether the AMP control signal cable is disconnected or loose. 2 When the abnormality does not disappear, replace the I/O2 board or the AMP.
AMP1 to AMP9 Communication error (read)	RX	The serial communication with the draft roller and the lift-driving servo amplifier was abnormal.	Communication will be resent if alarm reset is carried out. Check the following, when you occur frequently.
AMP1 to AMP9 Communication error (write)	RX		1 Check whether there are any disconnection and poor contact of a communication line. 2 Check whether there is any cable which a noise tends to generate near the communication line.
AMP1 to AMP9 Amplifier type error	AMP	The draft roller and the lift-driving servo amplifier are mounted incorrectly.	1 Check whether the amplifier is installed in a right position. 2 Check whether the DIP SW1 of the amplifier is set appropriately. (See 8.[7 2](2).) 3 Check whether communication wire disconnection or contact failure exists.
AMP1-* Feedback pulse circuit error	AMP1-*	The difference between the measured value of production length by the feedback signal of the servo amplifier AMP1-* and the measured value by PRS4 was 3% or more.	1 Check adjustment of the sensor (PRS4) for rpm measurement. 2 Check for breakage or looseness of the control signal wiring of AMP1-*. 3 If the error has not been eliminated, replace the I/O2 substrate or the AMP1.

9.1A.3 List of Erro Messages about Servo Amplifier

Alarm	Alarm name	Detecting method	Cause and counter measures
AL01	Over-current (OC)	IPM of the power supply detected following troubles. 1 Over-current 2 Overheating 3 Gate power supply low	1 Short circuit or grounding of armature wire (U, V, or W). 2 Ambient temperature is higher than 55 degrees Celsius. Above problems are likely. If other causes are likely, contact the manufacturer.
AL02	Over voltage (OV)	Main circuit DC power supply (PN voltage) is over 800 VDC.	1 The motor is running with a speed greater than the max.rotation rate. 2 Acceleration causes overshoot exceeding the max. rotation rate. 3 High input power voltage.
AL03	Low PN voltage (PNLV)	Main circuit DC power supply (PN voltage) dropped below 300 VDC.	1 Low input power voltage. 2 If this alarm is issued during motor acceleration, power supply capacity shortage is likely.
AL04	Amplifier abnormal (ACINF)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL05	Amplifier abnormal (CROH)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL06	Resolver disconnected (RELV)	Resolver signal voltage between R1 and R2 dropped below 0.35 VAC.	Check that the resolver cable is not broken or disconnected. Test the voltage level between R1 and R2. (It should be over 0.35 V in the AC range.)
AL07	Power status error (POWFAIL)	CPU cannot judge the amplifier type.	1 CPU's software version is not consistent with the unit configuration. 2 The amplifier is out of order. Above problems are likely. Please contact the manufacturer.
AL08	Amplifier abnormal (SOH)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL09	Amplifier abnormal (RGOH)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL10	Amplifier abnormal (RGST)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL11	Amplifier abnormal (ILLERR)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL12	DSP error (DSPERR)	DSP stopped working.	The amplifier is out of order. Please replace the amplifier.
AL13	Amplifier abnormal (BLV)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL14	Brake error (BERR)	1 When the dynamic brake is used, brake output turning ON did not generate the brake confirmation signal input.3 2 When the holding brake is used, brake output turning ON kept the brake confirmation signal ON.	Read the descriptions on the dynamic and holding brake connections and check the wiring and used accessories.
AL15	Over-current detection (OCS)	The motor current exceeded 120% of the current limit	1 The motor in rotation was locked mechanically. 2 Short-circuit or grounding of the U, V, and W phases of setting. the motor. 3 Erroneous setting of the parameter UP-02 (Motor application)

Alarm	Alarm name	Detecting method	Cause and counter measures
AL16	Speed amplifier saturation (VAS)	The speed amplifier was saturated and current exceeding the maximum level flew more than 3 seconds.	1 The motor is locked mechanically. 2 The load inertia is too great to accelerate or decelerate. 3 Erroneous setting of the parameter UP-02 (Motor application)
AL17	Motor overload (MOL)	Motor temperature calculated from the actual load level rose exceeding 110% of the maximum temperature setting.	1 Load is too much for the motor output capacity. 2 Operation cycles are too short for the motor capacity.
AL18	Instant thermal (POL)	This alarm is issued when output current is more than 120% of the motor rated current.	1 The motor is locked mechanically. 2 Load is too much for the motor output capacity. 3 Erroneous setting of the parameter UP-02 (Motor application)
AL19	Resolver error (RESERR)	The resolver feedback counter made erroneous counting.	1 Bad contact of the resolver cabling. 2 The resolver cable is installed near the power line and affected by noises. Check the resolver cable. 3 The ground line between the motor and the amplifier is broken or disconnected.
AL20	Overspeed (OSPD)	The rotation rate exceeded 120% of the maximum rotation setting.	1 The servo adjustment value is overshooting. Couduct auto tuning. 2 A command value was too much. 3 Bad contact of the resolver cabling. 4 The resolver cable is installed near the power line and affected by noises. 5 The ground line between the motor and the amplifier is broken or disconnected.
AL21	Deviation counter over (FULL)	Accumulated pulses in the deviation counter exceeded the following detection level. Detection level = Motor maximum rotation rate/60 × Sensor split count/TP2 × 10 **EXAMPLE:** Max.rpm 2000 rpm, Motor sensor:resolver Target loop gain TP2 = 60 Detection level＝2000/60 × 24000/60 × 10 ＝133000（pulses）	1 Load is too much for the motor output capacity. 2 The load inertia is too great to accelerate or decelerate. 3 The value for TP2 (Target loop gain) is set too high. 4 Current limit is set too low.
AL22	Amplifier abnormal (ABSE)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL23	Amplifier abnormal (ACN)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL24	Amplifier abnormal (BAL)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL25	Amplifier abnormal (OPALM)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL26	Parameter setting error (CERR)	Parameters UP-01 (Control mode) and UP-02 (Applicable motor) are not set, or set with invalid values.	This alarm is issued on the first power input. Set the user parameters UP-01 and UP-02, turn off the machine, make sure that the display went off, and then turn on the machine again.

9.1A.3 List of Erro Messages about Servo Amplifier

Alarm	Alarm name	Detecting method	Cause and counter measures
AL27	Amplifier abnormal (AEERR)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL28	Amplifier abnormal (ILLERR)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL29	Amplifier abnormal (ILLERR)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL30	Amplifier abnormal (ILLERR)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL31	Amplifier abnormal (ILLERR)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL32	Zero point saving error (MZE)	This alarm is issued together with AL06, AL19, AL22, AL23, and AL27.	Read the descriptions on AL06, AL19, AL22, AL23, and AL27.
AL33	Amplifier abnormal (CLD)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL34	Amplifier abnormal (ILLERR)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL35	Amplifier abnormal (ILLERR)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL36	Amplifier abnormal (ABT)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL37	Amplifier abnormal (ILLERR)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL38	Amplifier abnormal (ILLERR)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL39	Amplifier abnormal (ILLERR)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL40	Amplifier abnormal (EREE)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL41	Amplifier abnormal (ETER)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL42	Amplifier abnormal (EBACK)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL43	Amplifier abnormal (ECKER)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL44	Amplifier abnormal (EBAL)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL45	Amplifier abnormal (EABSE)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL46	Amplifier abnormal (EOSPD)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL47	Amplifier abnormal (EWER)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL48	Amplifier abnormal (EINT)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.
AL49	Amplifier abnormal (PHSERR)	The amplifier is out of order.	The amplifier is out of order. Please replace the amplifier.